IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of   :

Jakob NIELSEN   :

Serial No.: 08/865,962   :   Group Art Unit: 2153

Filed: May 30, 1997   :   Examiner: B. Edelman

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For: LATENCY-REDUCING BANDWIDTH-PRIORITIZATION FOR NETWORK
       SERVERS AND CLIENTS

REQUEST FOR RECONSIDERATION UNDER 37 C.F.R 1.111

Commissioner for Patents
Washington, DC 20231

Sir:

In response to an October 24, 2001 non-final Office Action, reconsideration in

view of the following remarks is respectfully requested. Claims 23-25, 27-31 and 33-39

are pending in this Application.

The Office Action rejects claims 23-25, 27, 28, 31, 34-36, 38 and 39 under 35

U.S.C. §103(a) over Cave et al. (U.S. Patent No. 5,943,046); rejects claim 33 under 35

U.S.C. §103(a) over Cave in view of Chen et al. (Threshold-based Admission Control

Policies for multimedia Servers; The Computer Journal, Vol. 39, No. 9, 1996) and rejects

claims 29, 30 and 37 over Cave in view of Waldron (U.S. Patent No. 5,428,789). These

rejections are respectfully traversed.

In particular, Applicants assert that at the time of the invention that it would not

have been obvious to modify Cave using the teachings of Chen, Waldron or any

knowledge of one of ordinary skill to teach or suggest at least a computer apparatus for allocating communication bandwidth that includes a bus to which a plurality of user stations are connected, at least one communications interface connecting the bus to a server in which <u>the server is configured to allocate communications bandwidth to the plurality of user stations over the communications interface based on at least one set of [specifically claimed] priorities</u>, as is recited in independent claim 23 and similarly in independent claims 24, 25, 27, 28 and 31.

Cave discloses various systems and methods for distributing multimedia information from primary site to a number of receiving stations over a number of respective satellite links. See, Abstract and Figures 1 and 2, for example. In various embodiments, a server using the Cave approach can receive a variety of different types of files, such as voice files, music files, image files and scene files. Having received the files, the server can simultaneously transmit the various files to a satellite (receiving station) over a link in a point-to-point configuration.

During operation, the Cave server can assign various priorities to the different types of files, allocate bandwidth according to the different priorities and transmit the various files simultaneously to the satellite. See, column 8 line 50 to column 9 line 42, for example. However, Cave does not teach or suggest at least a bus connected to a number of user stations wherein a server allocates communication bandwidth to the plurality of user stations over a communications interface based on at least one set of priorities.

To the contrary, a communication system based on Cave can only allocate bandwidth in a point-to-point configuration from a server over a link to a satellite. That

is, each link in a Cave communication system has but a single respective satellite/user station. See, Figures 1 and 2; column 8 lines 50-60 and column 9 lines 8-11, for example. Accordingly, Cave does not teach, suggest or even appreciate the advantages that can accrue in a communication system having a point to multi-point configuration as oppose to a point-to-point configuration. For example, in various networks, such as the Internet, where multiple users using multiple user stations will be regularly receiving transmissions from a server, the various users can benefit as it is possible to dramatically reduce the latency perceived by each user in such a shared network by prioritizing various files and assigning bandwidth accordingly. See, page 2 line 9-page 3 line 6, for example.

While the Office Action asserts "it would have been obvious to a person having ordinary skill in the art to use a bus connected to the clients to the server disclosed in this system taught by Cave, because buses provide a reliable, high bandwidth communication media for local area networks, Applicants respectfully submit that it is not the only particular form of medium, i.e., the bus, that differs from Cave, but Applicants assert that the entire configuration of the claimed communications network, i.e., point to multi-point network configuration, is fundamentally different from that of Cave. Thus, Cave does not teach each and every element of the claimed invention.

Chen discloses various threshold-based admission policies for multimedia servers. The most relevant policy, the "free threshold" policy, is simply a first-come, first-serve approach where various chunks of available bandwidth are allocated to newly arriving communications requests. See, p.759, section 3.1, for example. In operation, three sets of bandwidth are created to service the communication requests: one set where bandwidth

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"chunks" are dedicated only to high priority users, one set where bandwidth "chunks" are dedicated only to low-priority users and one set in which bandwidth chunks can be allocated to either high or low priority users.

Unlike the present invention, the size of any bandwidth chunk does not vary according to any set of the priorities as are claimed in independent claim 31 from which claim 33 depends, nor does the Office Action assert such. As is evidenced by Table 1 of Chen (see generally, page 760), which lists every factor that Chen uses to affect priority, there is no factor that Chen uses that teaches or suggests any of the claimed factors of independent claim 31. Thus, Chen does not provide for the deficiencies of Cave.

Waldron discloses a method and apparatus for optimizing a user response time in a priority preemptive operating system. See, Abstract, for example. Waldron does not teach or suggest the server configured to allocate communications bandwidth to a plurality of user stations over the communications interface based on at least one set of priorities as claimed in independent claims 28 and 31 from which claims 29, 30 and 37 depend. Thus, Waldron does not provide for the deficiencies of Cave and Chen.

Accordingly, Applicants submit that it would not have been obvious at the time of the invention to modify Cave using the teachings of Chen, Waldron or any knowledge available to one of ordinary skill in the art to include at least a server configured to allocate communications bandwidth to a plurality of user stations over a communications interface based on at least one set of [specifically claimed] priorities. Therefore, independent claims 23, 24, 25, 27, 28 and 31 define patentable subject matter. The remaining dependent claims define patentable subject matter by virtue of their
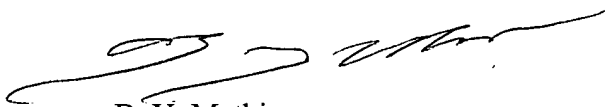
dependency as well as for the additional features they recite. Accordingly, withdrawal of the rejections of the claims under 35 U.S.C. §103(a) is respectfully requested.

For the reasons given above, Applicants believe that this Application is in condition for allowance and Applicants request that the Examiner give the Application favorable consideration and permit it to issue as a patent, however, if the Examiner believes that the Application can be put in even better condition for allowance, the Examiner is invited to contact Applicants' representative listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

B. Y. Mathis
Registration No. 44,907

600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 BYM:DLS/kap
Date: January 24, 2002
Facsimile: (202) 756-8087

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